

REMARKS

As an initial matter, applicant thanks the Examiner for the courtesies extended in the telephone interview conducted between the Examiner and the undersigned on April 6, 2009.

Claims 1-23 are pending. By this amendment, claims 1, 11 and 23 have been amended to clarify the claimed subject matter thereof. Claims 1-23 remain pending upon entry of this amendment, with claims 1 and 11 being in independent form.

Claim 23 was objected to as purportedly having informalities. Claim 23 was rejected under 35 U.S.C. §112, second paragraph, as purportedly indefinite.

Claims 1-4, 6, 9-14, 16, 19 and 20 were rejected under 35 U.S.C. §103(a) as purportedly unpatentable over Sabol et al. (US 2004/0101086 A1) in view of U.S. Patent No. 6,278,761 to Kim et al. Claims 5 and 15 were rejected under 35 U.S.C. §103(a) as purportedly unpatentable over Sabol in view of Kim and further in view of Grauer et al., "Quantification of Body fat Distribution in the Abdomen using Computer Tomography." Claims 7, 8, 17 and 18 were rejected under 35 U.S.C. §103(a) as purportedly unpatentable over Sabol in view of Kim and further in view of U.S. Patent No. 7,155,047 to Wollenweber. Claims 21 and 22 were rejected under 35 U.S.C. §103(a) as purportedly unpatentable over Sabol in view of Kim and further in view of Rosania et al. (US 2003/0059093 A1). Claim 23 was rejected under 35 U.S.C. §103(a) as purportedly unpatentable over Sabol in view of Kim and Wollenweber and further in view of Griffin et al. (US 2004/0207625 A1).

Applicant respectfully submits that the present application is allowable over the cited art, for at least the reason that the cited art does not disclose or suggest the aspects of the present application of (i) setting a line surrounding a non-adipose region extracted from the body region, and (ii) separating a total body adipose region into a visceral adipose region and a subcutaneous

adipose region based on whether a specified region is located inside or outside of the line surrounding the non-adipose region.

Sabol, as understood by applicant, proposes an approach for quantifying tissue fat content using a multi-energy computed tomography (MECT) system, wherein, in some instances, the MECT image data is segmented to determine a region of interest which may include a non-adipose region.

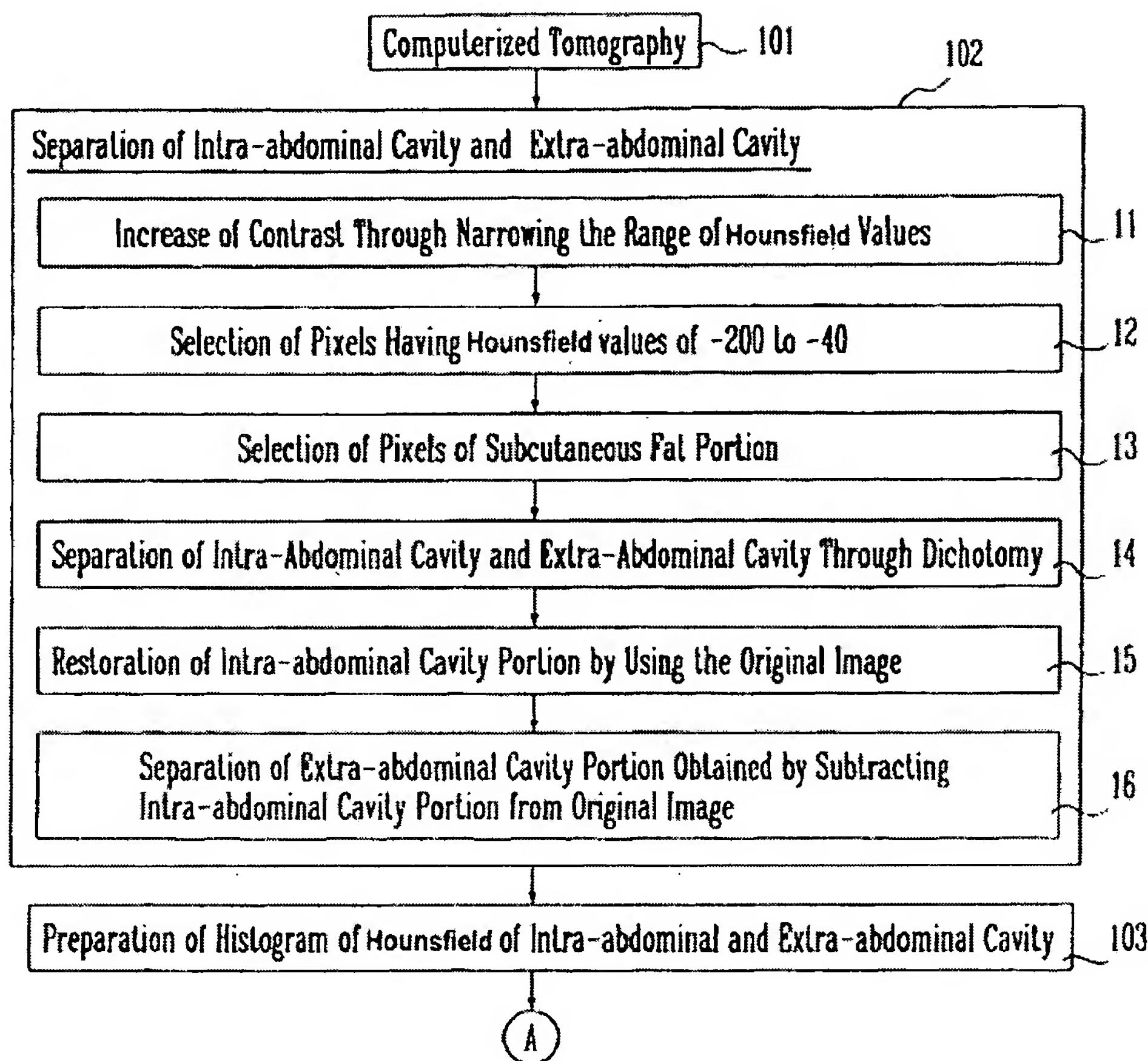
However, Sabol does not disclose or suggest the above-mentioned aspects of the present application of separating a total body adipose region into a visceral adipose region and a subcutaneous adipose region based on whether a specified region is located inside or outside of a line surrounding the non-adipose region.

Kim, as understood by applicant, proposes a method for establishing a range of somatic fat by Gaussian function approximation in computerized tomography, by obtaining a histogram of Hounsfield values in a computerized tomography image, approximating the histogram to Gaussian function by least square method and determining the range of somatic fat from a width and a position of a somatic fat peak in the histogram of Hounsfield values.

As discussed in the telephone interview, in the approach proposed in Kim, an abdominal cavity portion and the subcutaneous portion are separated in the computerized tomography image (composed of Hounsfield values) to separately measure the amounts of intra-abdominal cavity fat and subcutaneous fat (step 102 in Fig. 1A of Kim, reproduced below). An image of high contrast is obtained by narrowing the range of Hounsfield values to separate the abdominal cavity and the subcutaneous portion (substep 11). The pixels in such image having Hounsfield values in a specific subrange of the narrowed range are painted with same color (substep 12), and thus the subcutaneous fat portion is combined into one lump (substep 13). The subcutaneous fat

portion is separated into a portion composed of same values so as to separate the abdominal cavity and the subcutaneous portion.

**FIG. 1A**



Thus, Kim proposes separating the abdominal cavity portion and the subcutaneous portion based on the Hounsfield values.

In the approach of Kim, extraction of an adipose region and non-adipose region is performed using CT values. However, a visceral adipose region and a subcutaneous adipose region cannot be separated from an adipose region using CT values because both of the visceral adipose region and the subcutaneous adipose region are adipose regions and therefore they have equal CT values.

Some examples of disadvantages from such an approach based on Hounsfield values are discussed in the Background Art section (page 1, lines 21-25, reproduced below) of the present application:

“... the image diagnosing apparatus extracts, as an adipose region, a region where a CT value is within a threshold range set by an operator. This causes an unnecessary minute adipose region such as feces remaining in intestine to be included in the extraction region, and for precise measurement, the operator has to manually remove the unnecessary region.”

As discussed in the telephone interview, the approach of Kim simply does not involve the above-mentioned aspects of the present application of separating a total body adipose region into a visceral adipose region and a subcutaneous adipose region *based on whether a specified region is located inside or outside of a line surrounding the non-adipose region*. Such aspects enable one to accurately delineate the visceral adipose region and the subcutaneous adipose region to a degree that cannot be obtained by the approach based on a histogram of Hounsfield values, as proposed in Kim.

Likewise, none of the other cited references disclose or suggest such aspects of the present application.

Applicant submits that the cited art, even when considered along with common sense and common knowledge to one skilled in the art, does *NOT* render unpatentable the above-mentioned aspects of the present application, and that therefore independent claims 1 and 11, and the claims depending therefrom, are allowable over the cited art.

In view of the remarks hereinabove, applicant submits that the application is now in condition for allowance. Applicant earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Patent Office is hereby authorized to charge any

required fees in connection with this Amendment, and to credit any overpayment, to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,



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